AMENDMENTS TO THE CLAIMS

The following is a complete, marked up listing of revised claims with a status identifier in parentheses, underlined text indicating insertions, and strikethrough and/or double-bracketed text indicating deletions.

LISTING OF CLAIMS:

1. (Original) A method of growing an AlGaN semiconductor layer structure, the method comprising the step of:

(a) supplying ammonia, gallium and aluminium to a growth chamber thereby to grow a first (Al,Ga)N layer having a non-zero aluminium mole fraction by MBE over a substrate disposed in the growth chamber; wherein ammonia is supplied at a beam equivalent pressure of at least 1x10-4 mbar, gallium is supplied at a beam equivalent pressure of at least 1x10-8 mbar and aluminium is supplied at a beam equivalent pressure of at least 1x10-8 mbar.

2. (Original) A method as claimed in claim 1 wherein ammonia is supplied at a beam equivalent pressure in the range from 1x10-4 mbar to 2x10-2 mbar.

3. (Previously Presented) A method as claimed in claim 1 wherein the substrate temperature is within the range from 850°C to 1050°C.

4. (Previously Presented) A method as claimed in claim 1 wherein gallium is supplied at a beam equivalent pressure in the range from 1x10-8 mbar to 1x10-4 mbar.

5. (Previously Presented) A method as claimed in claim 1 wherein aluminium is supplied at a beam equivalent pressure in the range from 1x10-8 mbar to 1x10-4 mbar.

6. (Original) A method as claimed in claim 5 wherein aluminium is supplied at a beam equivalent pressure in the range from 1x10-8 mbar to 2x10-7 mbar.

7. (Previously Presented) A method as claimed in claim 1 and comprising the further step of:

(b) varying the supply rate of gallium and/or aluminium thereby to grow a second (Al,Ga)N layer by MBE over the first (Al,Ga)N layer, the second (Al, Ga)N layer having a different aluminium mole fraction from the first (Al,Ga)N layer.

8. (Original) A method as claimed in claim 7 wherein step (b) comprises reducing the supply rate of aluminium to zero whereby the second (Al,Ga)N layer is a GaN layer.

9. (Previously Presented) A method as claimed in claim 1 and comprising the further step of:

(c) varying the supply rate of gallium and/or aluminium thereby to grow a third (Al,Ga)N layer by MBE over the second (Al,Ga)N layer, the third (Al,Ga)N layer having a different aluminium mole fraction from the second (Al,Ga)N layer.

10. (Original) A method as claimed in claim 9 wherein the third (Al,Ga)N layer has substantially the same aluminium mole fraction as the first (Al,Ga)N layer.

11. (Previously Presented) A method as claimed in claim 1 wherein the substrate comprises an (In,Ga)N layer.

12. (Original) A method as claimed in claim 11 wherein the substrate is an InGaN substrate.

13. (Original) A method as claimed in claim 11 wherein the substrate is a GaN substrate.

14. (Original) A method as claimed in claim 11 wherein the substrate comprises an (In,Ga)N epitaxial layer disposed over a base substrate.

15. (Previously Presented) A method as claimed in claim 1 and comprising the further step of supplying a dopant during at least step (a).

16. (Previously Presented) A method as claimed in claim 1 wherein the first (Al,Ga)N layer has an aluminium mole fraction of greater than 0.01.

17. (Previously Presented) A method as claimed in claim 1 wherein the first (Al,Ga)N layer has an aluminium mole fraction of less than 0.2.

18. (Previously Presented) An (Al,Ga)N layer grown by a method as defined in claim 1.

19. (Previously Presented) An (Al,Ga)N multilayer structure grown by a method as defined in claim 7.

20. (Original) An optoelectronic device comprising an (Al,Ga)N layer as defined in claim 18.

21. (Original) An optoelectronic device comprising an (Al,Ga)N multilayer structure as defined in claim 19.